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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,635	11/01/2000	Todd Alan Balisky	MPI-106107-0	9023

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Applied Materials  
P O Box 450A  
Santa Clara, CA 95052

EXAMINER

WACHTEL, ALEXIS A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

09/674,635

### Applicant(s)

BALISKY, TODD ALAN

### Examiner

Alexis Wachtel

### Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,27-35 is/are rejected.
- 7) ☒ Claim(s) 2-26 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5-20-2002.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

***Detailed Action***

***Claim Objection***

1. With respect to claim 32, the phrase "said source pump" lacks antecedent basis.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With respect to claim 1, Applicant does not clearly describe what is meant by the term precise and how it is intended to limit the claim. Additionally, Applicant does not clearly describe what is meant by the phrase "selectable combination."

With respect to claim 35, the claimed method is missing essential steps. The method has the step of taking a calibration reading of the calibration sample but does not include the step of correcting or comparing the reading to the standard value. Additionally, the method does not clearly explain how the off-line pH sensor is immersed into the chemical sample. If the sample is removed from the sample stream, the sample no longer an accurate reflection of the process stream. It is essential that the pH sensor be placed into the flowing process stream in the vicinity of the on-line pH sensor in order to accurately calibrate the on-line pH sensor.

***Claim Rejections - 35 USC § 102***

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 27 is rejected under 35 U.S.C. 102(b) as being anticipated by US 3,887,110 A to Porter.

Porter discloses a precision delivery arrangement (Fig.3) for chemical comprising a pneumatic pump (25) and an orifice coupled to the pump (24) and a flow meter (41) coupled to the orifice.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 28-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,887,110 A to Porter.

With respect to claim 28, Porter discloses a positive displacement pump but does not explicitly disclose a double diaphragm pump. The use of a double diaphragm pump for chemical pumping is well known in the art. It would have been obvious to one of ordinary skill at the time the invention was made to have substituted a positive double diaphragm pump for the pump disclosed by Porter as an obvious matter of engineering design choice involving a mere substitute of equivalently functioning structures. With

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respect to claims 29 and 30, Porter discloses that the pump can be operated at low flow rates, including drops (Col 6, lines 8-13), but does not explicitly disclose the flow rates as claimed. However, the pump is capable of being configured to provide the claimed flow rates.

With respect to claim 31 and 32, the instant claims do not require any structure that significantly differs from the apparatus of Porter as described above. It is noted that the rated flow rate of the pump is an operational parameter and does not limit the structure of the claimed apparatus.

With respect to claims 33 and 34, Porter does not explicitly disclose the claimed orifice internal diameter. However, it would have been obvious to one of ordinary skill at the time the invention was made to have varied the orifice internal diameter according to the flow rates required for the desired utility. The change in size of a component is an obvious matter of engineering design choice.

8. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,602,033 to Burrell et al and US 5,342,527 to Chevallet et al.

On-line and off-line calibration of pH sensors is well known in the art. Typical on-line calibration of pH sensors involves immersing a pH sensor into a calibration solution. Burrell and Chevallet teach calibrating on-line sensors using an equivalent calibrated off-line sensor. It would have been obvious to one of ordinary skill to have used the sensor calibration methods of Burrell or Chevallet for the online calibration of a pH sensor motivated by a reasonable expectation of success.

***Prior Art of Record***

9. The prior art of record and not relied upon is considered pertinent to Applicant's disclosure. In addition, the following references are cited for disclosing various aspects of Applicant's invention:

US 5,631,845; US 5,484,626; US 5,352,350; US 4,055,751; US 5,389,215;  
US 5,976,341; US 5,364,510; US 5,368,715; US 5,182,131; US 5,750,014

***Allowable Subject Matter***

10. Claim 1 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. Claims 2-26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Nor prior art alone or in combination has been found to teach the system claimed in claim 1. EP 0180 090 teaches a main tank for delivering a plating solution by a precision metering means to a mixing tank. The plating solution is pumped from the mixing tank to the plating tank (Fig.1).

EP 0180 090 fails to teach providing the mixing tank with a source of nitrogen gas that has been humidified. JP 04314883 broadly teaches providing a plating solution with an inert gas such as nitrogen to prevent the plating solution from sludging.

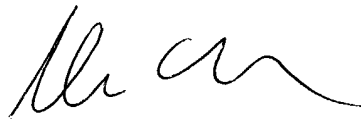
While EP 0180 090 and JP 04314883 together can teach the desirability of providing a nitrogen source for the plating solution in a plating solution tank, the references are silent as to the humidification of the nitrogen gas. US 5,364,510 to

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Carpio teaches a plating bath that has flow of deionized water flowing into a plating bath for the purpose maintaining the desired plating concentration. However, having integrated the deionized water flow with a nitrogen gas source so as to obtain a humidified nitrogen gas flow would have only been obvious to one of ordinary skill with use of hindsight motivation.

### **Conclusion**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Wachtel whose telephone number is 571-272-1455. The examiner can normally be reached on 10:30am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola, can be reached at (571)-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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